

JUL 16 2007

Application Number 10/553044
Response to Office Action dated 04/16/2007

REMARKS

Applicants request reconsideration of the claims in view of the amendments and remarks herein. Claims 1, 4, 7-9, 11 and 12 are amended; claims 3 and 10 are cancelled without disclaimer or prejudice. Applicants have not added new matter; support for the metal resistor element is given on page 7, lines 13-16; support for insulating layers covering the areas between the electrodes is given in FIG. 2 and on page 8, lines 9-15. Claims 1, 2, 4-9, and 11-14 are pending.

Applicants traverse the rejection of claims of claims 1-13 as being anticipated by U.S. Patent 6348852 B1 to Kojima et al. (Kojima '852). Kojima '852 does not teach or suggest using a metal resistor element, as required by claims 1 and 8. Nor can the use of metal resistor element be obvious in view of the teachings of Kojima '852 because the whole point of Kojima '852 is to create a thermistor having a positive temperature coefficient which must be created from a conductive polymer of high density polyethylene and carbon black. *See* Kojima '852 at column 3, lines 33-35. A metal resistor element would not yield the same electrical properties as the PTC conductive polymer and would thus undermine the teachings of Kojima '852. Claims 2, 4-7 are allowable at least in part because of their dependence upon claim 1. Applicants do not concede the correctness of the rejection.

With respect to claims 8, 9, 11-13, Applicants traverse because Kojima '852 does not teach or suggest forming a pattern of conductive layers to cover that portion of the surface not covered with the pattern of insulating layer. Kojima '852 discloses applying copper foils to create the electrodes, and then covering the electrodes with an epoxy-modified acrylic resin, thus indicating that the insulating layers are formed after the electrodes, *see* Kojima '852 at column 4, lines 11-40. This is just exactly opposite from what is claimed by Applicants in that the insulating layers are formed first and then the conductive layers are formed on those portions of the surface not covered with the insulating layers. It would not be obvious to one of skill in the art to apply the techniques of Kojima '852 to Applicants' claimed invention because the spacing of the insulating layers between the electrodes accurately set the resistance of the resistor element. The dimensions of the insulating layers can be accurately set by thick-film printing of the

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insulating layers. Kojima '852 relies on the PTC composition to prevent a short circuit and places the electrodes to compensate for the repeated expansions and shrinkage of the conductive polymers that impose stress on the electrodes. Thus, Kojima '852 and Applicants' claimed invention are directed to two different problems.

Applicants further traverse the rejection of claims 7 and 14 as being obvious over a combination of Kojima '852 and U.S. Patent 5781158 to Ko et al. (Ko '158). The Office Action Summary Sheet refers to claims 1-13 rather than claims 1-14 but claim 14 is specifically rejected. Applicants traverse because Ko '158 does not correct the shortcomings of Kojima '852 by providing a metal resistor element and then creating the electrodes on insulating layers, as required by claims 7 and 14. Ko '158 teaches a microwave antenna comprised stacked dielectric substrates which are insulating as opposed to the metal resistor element. Thus, the combination of Kojima '852 and Ko '158 does not teach or suggest the claimed invention.

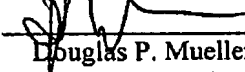
Applicants request the Examiner review the claims in view of the amendments and remarks and allow the case. Should there be any remaining issues that could be easily resolved with a telephone conference, the Examiner is invited to telephone Mr. Douglas P. Mueller, Reg. No. 30,300 at 612.455.3804.



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Respectfully submitted,

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